

AMENDMENTS TO THE CLAIMS

The listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

1. (Currently Amended) A loading and unloading stand of a palletless rack type storage system comprised of a plurality of racks having a loading fork and a stacker crane for loading cargo onto or unloading from the racks, and the stacker crane having a transfer fork arranged in a right angel to the loading fork, ~~the transfer fork moving up or down in respect to to~~ enter into, move up and down relative to and retreat from the loading fork while being alternately overlapped with the loading fork, the loading and unloading stand comprising:

~~plural~~ a plurality of fork bars arranged lengthwise with an interval to each other[[:]], the fork bars being fixedly mounted on longitudinal beams arranged across the fork bars, in which at least one free end of the fork bars takes a cantilever form;

~~longitudinal beam arranged in a right angle against the fork bars, and supporting below the fork bars, so that at least one free end of the fork bars takes a form of cantilever, and fixedly mounting each fork bar on the rack;~~

~~plural~~ a plurality of rollers being arranged in a proper interval in the fork bars and with the roller's rotation center being arranged placed along a width of the fork bars, the upper portion of the rollers having an excessive protrusion above the top of the fork bars so as to allow ~~wheels~~ bottom of the cargo to be rolling-contacted; and

a drive unit to keep the rollers rolling in the loading or unloading direction of the cargo, ~~in which~~ wherein the loading[[:]] and unloading stand is ~~providing~~ provided at a rim near the

edge of ~~the~~ an entrance of ~~an~~ a predetermined floor of the racks and being ~~[[a]]~~ the same level as ~~the loading and unloading~~ a conveyor to load the cargo into the racks from a loading station, or unload cargo to an unloading station from the racks.

2. (Currently Amended) The loading~~[[/]]~~ and unloading stand of a palletless rack type storage system according to claim 1, wherein~~[[:]]~~ the fork bars ~~has~~ have approximate “U” shape body~~[[,]]~~ and ~~plural~~ a plurality of support plates placed between ~~each~~ longitudinal walls of the body for rotationally supporting the rollers.
3. (Currently Amended) The loading~~[[/]]~~ and unloading stand of a palletless rack type storage system according to claim 2, wherein~~[[:]]~~ ~~plural foreign substance outlets are~~ the fork bars are provided with a plurality of foreign substance outlets formed at the ~~floor~~ bottom of the ~~fork bar~~ “U” shape body.
4. (Currently Amended) The loading~~[[/]]~~ and unloading stand of a palletless rack type storage system according to claim ~~[[2]]~~ 3, wherein~~[[:]]~~ the fork bars are further provided with a cover ~~is further provided on~~ at the top portion of the fork bars so as to prevent the entry of the foreign substance.
5. (Cancelled)
6. (Currently Amended) The loading~~[[/]]~~ and unloading stand of a palletless rack type storage system according to claim ~~[[1]]~~ 2, wherein~~[[:]]~~ ~~an upper portion of a support hole formed at the support plates is left open, and the support hole supports~~ formed with a support hole for supporting a shaft of the rollers~~[[.]]~~, and preferably the top portion of the support plates is left open so as to receive the shaft of the rollers.

7. (Currently Amended) The loading[[/]] and unloading stand of a palletless rack type storage system according to claim 1, wherein[[:]] the fork bars ~~is comprised of~~ have two parallel longitudinal walls and ~~plural~~ a plurality of support plates placed ~~at a right angle~~ between ~~each~~ the longitudinal walls for rotationally supporting the rollers.

8. (Currently Amended) The loading[[/]] and unloading stand of a palletless rack type storage system according to claim 1, wherein[[:]] the fork bars ~~is~~ have a rectangular shape body and a plurality of support plates ~~is~~ uprightly placed on the top ~~plate~~ of the body for supporting the roller.

9. (Currently Amended) The loading[[/]] and unloading stand of a palletless rack type storage system according to claim 1, wherein[[:]] the fork bars ~~is comprised of~~ have a rectangular shape body having a ~~body opening~~ slot formed at the top ~~plate~~ of the body, and a container-shape roller housing for accommodating the roller.

10. (Currently Amended) The loading[[/]] and unloading stand of a palletless rack type storage system according to claim 1, wherein[[:]] the longitudinal beams ~~is comprised of~~ have a first longitudinal beam for supporting one end of the fork bars and a second longitudinal beam for supporting middle portion of the fork bars, ~~in which~~ whereby the transfer fork approaches ~~toward~~ only one lateral side of the ~~stand~~ fork bars.

11. (Currently Amended) The loading[[/]] and unloading stand of a palletless rack type storage system according to claim [[10]] 1, wherein[[:]] the ~~multiple~~ rollers are arranged at ~~each fork bar at a regular interval from roller~~ in a row, and such that the rollers are placed horizontally at regular intervals and neighboring shafts of ~~each~~ the respective rollers ~~is~~ are drivingly coupled.

12. (Currently Amended) The loading~~[[/]]~~ and unloading stand of a palletless rack type storage system according to claims 1 or 11, wherein~~[[:]]~~ ~~a part of the drivingly coupled rollers is~~ are arranged along ~~[[a]]~~ the ~~direction of~~ loading/unloading direction of cargo ~~in~~ at a ~~certain~~ desired intervals, and ~~is~~ are connected to the drive unit ~~so it can rotate the roller, and the connected rollers act as driving rollers.~~

13. (Currently Amended) The loading~~[[/]]~~ and unloading stand of a palletless rack type storage system according to claim 1, wherein~~[[:]]~~ ~~each~~ the longitudinal beams support ~~each end of the fork bars~~~~[[,]]~~ where such that the respective supporting points ~~is~~ have a distance from ~~each~~ the end of the fork bars toward the middle of the fork bars, and ~~the respective both ends of each the longitudinal beams are connected with a post, whereby the transfer beam fork approaches both lateral sides of the stand fork bars, and wherein the rollers is comprised of include a first rollers and a second rollers bordered at a the center portion of the fork bars, and the first and second rollers being drivingly individually coupled to the drive unit~~~~[[,]]~~ and the first roller is isolated from the second roller so as to individually support respective the bottom of each different cargo.

14. (Currently Amended) The loading~~[[/]]~~ and unloading stand of a palletless rack type storage system according to claim 13, wherein~~[[:]]~~ the first and second rollers ~~is~~ are comprised of roller row having multiple rollers arranged ~~at~~ in each fork bar at a regular intervals, neighboring shafts of ~~each the respective rollers is~~ are drivingly coupled.

15. (Currently Amended) The loading~~[[/]]~~ and unloading stand of a palletless rack type storage system according to claims 1 or 11, wherein~~[[:]]~~ the drive unit is comprised of a drive pulley arranged ~~in a predetermined interval~~ below the fork bars having the roller row, a driven pulley provided at ~~[[a]]~~ one shaft of the roller row, a first drive belt ~~coupling~~ coupled with ~~neighboring~~ the drive pulley, a second drive belt ~~connecting~~ connected with the corresponding drive pulley and driven pulley, and a motor for giving rotation to ~~one of any~~ the drive ~~pulleys~~ pulley.

16. (Currently Amended) The loading~~[[/]]~~ and unloading stand of a palletless rack type storage system according to claim 1, wherein~~[[:]]~~ the fork bars are provided with a projection tab ~~is~~ provided at the lower middle portion of the fork bars with a ~~proper~~ predetermined height, and ~~is~~ are connected with ~~each~~ the longitudinal beams through the projection tab.

17. (Currently Amended) The loading~~[[/]]~~ and unloading stand of a palletless rack type storage system according to claim 1, ~~wherein: the stand is further comprised of~~ comprising: a stopper ~~that is comprised to stop~~ for placing the cargo ~~running on~~ rolling into the fork bars at a predetermined position.

18. (Currently Amended) The loading~~[[/]]~~ and unloading stand of a palletless rack type storage system according to claim 17, wherein~~[[:]]~~ the stopper ~~is~~ includes a limit switch that is attached on a supporter between the cargo and ~~the~~ a post, ~~[[and]]~~ the supporter being ~~uprighted~~ upright from the longitudinal beams, by which the motor stops when the cargo ~~has~~ is in contact with the limit switch.

19. (Currently Amended) The loading[[/]] and unloading stand of a palletless rack type storage system according to claim 17, wherein[[:]] the stopper ~~is~~ includes a distance sensor that is attached on a post, by which the motor stops when ~~the~~ a desired distance of the approaching cargo is detected ~~to the drive unit~~.

20. (Currently Amended) The loading[[/]] and unloading stand of a palletless rack type storage system according to claim [[17]] 1, ~~wherein: the stand is further comprised of~~ comprising: a weight sensor for measuring deflection of the longitudinal beams caused by the weight of cargo, that is the weight sensor being installed at a lower portion of the longitudinal beams, by which the deflection of the longitudinal beams caused by the overweight weight of cargo is measured, and generating a denial signal for overweight cargo ~~is generated~~.